# CITY OF HUETTER (PWSNO 1280100)
# SOURCE WATER ASSESSMENT REPORT

**January 31, 2002**

## State of Idaho
## Department of Environmental Quality

## Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the act. This risk assessment is based on a land use inventory in the well recharge zone, sensitivity factors associated with how the well was constructed, and aquifer characteristics.

This report, *Source Water Assessment for City of Huetter*, describes the public drinking water well; the well recharge zone and potential contaminant sites located inside the recharge zone boundaries. This assessment, taken into account with local knowledge and concerns, should be used as a planning tool to develop and implement appropriate protection measures for this public water system. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

A single 180-foot deep well pumping from the Rathdrum Prairie Aquifer supplies the City of Huetter drinking water. The system is inter-tied with a well owned by Crown Pacific that is available for emergency back up. The City of Huetter water system serves a population of about 100 people in a small community located north of the Spokane River between Post Falls and Coeur d'Alene, Idaho. Historically, Huetter has had few water quality problems. A groundwater Susceptibility Analysis conducted by DEQ December 19, 2001 ranked the well moderately susceptible to contamination, mostly because of natural risk factors associated with local geology.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

The City of Huetter water system is in compliance with *Idaho Rules for Public Drinking Water Systems.* Drinking water protection activities for City of Huetter should emphasize adhering to a regular water testing schedule and a routine maintenance schedule. It may be helpful for the system to develop a maintenance and operation guide for future operators that explains the necessity for keeping the pump house and sanitary set back around the well free from the use or storage of potential ground water contaminants.

Because 186 public water systems in Idaho draw water from the Rathdrum Prairie Aquifer, they should consider forming a regional group to represent their interests before state, county and municipal governing bodies when regulatory tools like zoning overlays, or enactment of building codes are the most appropriate ground water protection measures. Partnerships with state and local agencies and industry groups should also be established.

Due to the time involved with the movement of ground water, source water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. For assistance in developing protection strategies, please contact your regional Department of Environmental Quality office or the Idaho Rural Water Association.

# SOURCE WATER ASSESSMENT FOR CITY OF HUETTER

## Section 1. Introduction - Basis for Assessment

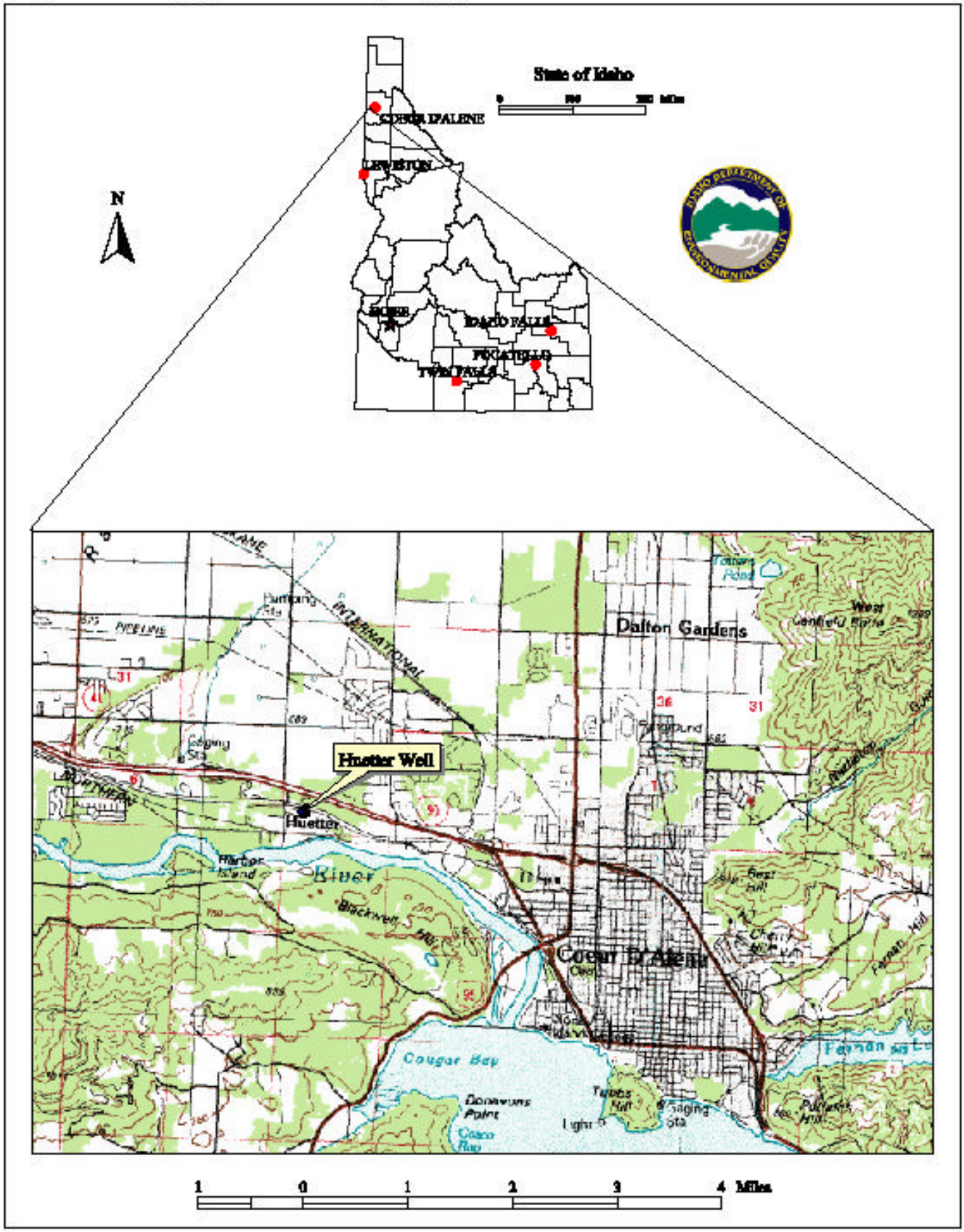
The following sections contain information necessary for understanding how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this source means.** A map showing the delineated source water assessment area and an inventory of significant potential sources of contamination identified within that area are included. The ground water susceptibility analysis worksheets used to develop this assessment are attached.

### Level of Accuracy and Purpose of the Assessment

The Idaho Department of Environmental Quality (DEQ) is required by the U.S. Environmental Protection Agency (EPA) to assess every public drinking water source in Idaho for its relative susceptibility to contaminants regulated by the Safe Drinking Water Act. These assessments are based on a land use inventory inside the delineated recharge zones, sensitivity factors associated with how the well is constructed, and aquifer characteristics. The state must complete more than 2900 assessments by May of 2003. Because resources and the time available to accomplish assessments are limited, an in-depth, site-specific investigation for every public water system is not possible.

**The results of the source water assessment should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.** The ultimate goal of this assessment is to provide data to local communities for developing a protection strategy for their drinking water supply. The Idaho Department of Environmental Quality recognizes that pollution prevention activities generally require less time and money to implement than treating a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a source water protection program should be determined by the local community based on its own needs and limitations. Wellhead or source water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

*Figure 1. Geographic Location of City of Huetter*



## Section 2. Preparing for the Assessment

### Defining the Zones of Contribution - Delineation

The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the well recharge area into time of travel zones indicating the number of years necessary for a particle of water to reach a well. DEQ used a refined computer model approved by the EPA to determine the time of travel (TOT) for water pumped from the Rathdrum Prairie Aquifer. The computer model used data assimilated by DEQ from a variety of sources including the local well logs.

The City of Huetter community water system has 41 connections serving a population of 100 people in a residential area north of the Spokane River between Post Falls and Coeur d'Alene. The primary source for system is a 180-foot deep well with an estimated capacity of 96 GPM. An inter-connection with Crown Pacific provides emergency backup for the system.

The delineated source water assessment area for City of Huetter encompasses approximately 10 acres stretching south from the well to the edge of the Rathdrum Prairie Aquifer defined by the Spokane River. The estimated time of travel from the edge of the Aquifer to the well is one year or less.

### Identifying Potential Sources of Contamination

The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of ground water contamination. Inventories for public water systems in Idaho were conducted in two-phases. The first phase involved identifying and documenting potential contaminant sources within the City of Huetter source water assessment areas through the use of computer databases and Geographic Information System maps developed by DEQ. A map showing the delineation and a table summarizing the results of the database search were then sent to system operators for review and correction during the second or enhanced phase of the inventory process

Figure 2, *City of Huetter Delineation and Potential Contaminant Inventory* on page 7 of this report shows the location of the City of Huetter well, and the zone of contribution DEQ delineated for it. The recharge zone lies under the former Crown Pacific log yard. The mill is no longer in business and there is no log storage at the site at this time. Future use of the property has not been determined.

Many potential sources of contamination are regulated at the federal level, state level, or both to reduce the risk of release. When a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation.

## Section 3. Susceptibility Analysis

The susceptibility to contamination of all groundwater sources in Idaho is being assessed on the following factors:

- physical integrity of the well,
- hydrologic characteristics,
- land use characteristics, and potentially significant contaminant sources
- historic water quality

The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. A high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. The following summaries describe the rationale for the susceptibility ranking. The Susceptibility Analysis Worksheet in Attachment A shows in detail how the City of Huetter well scored.

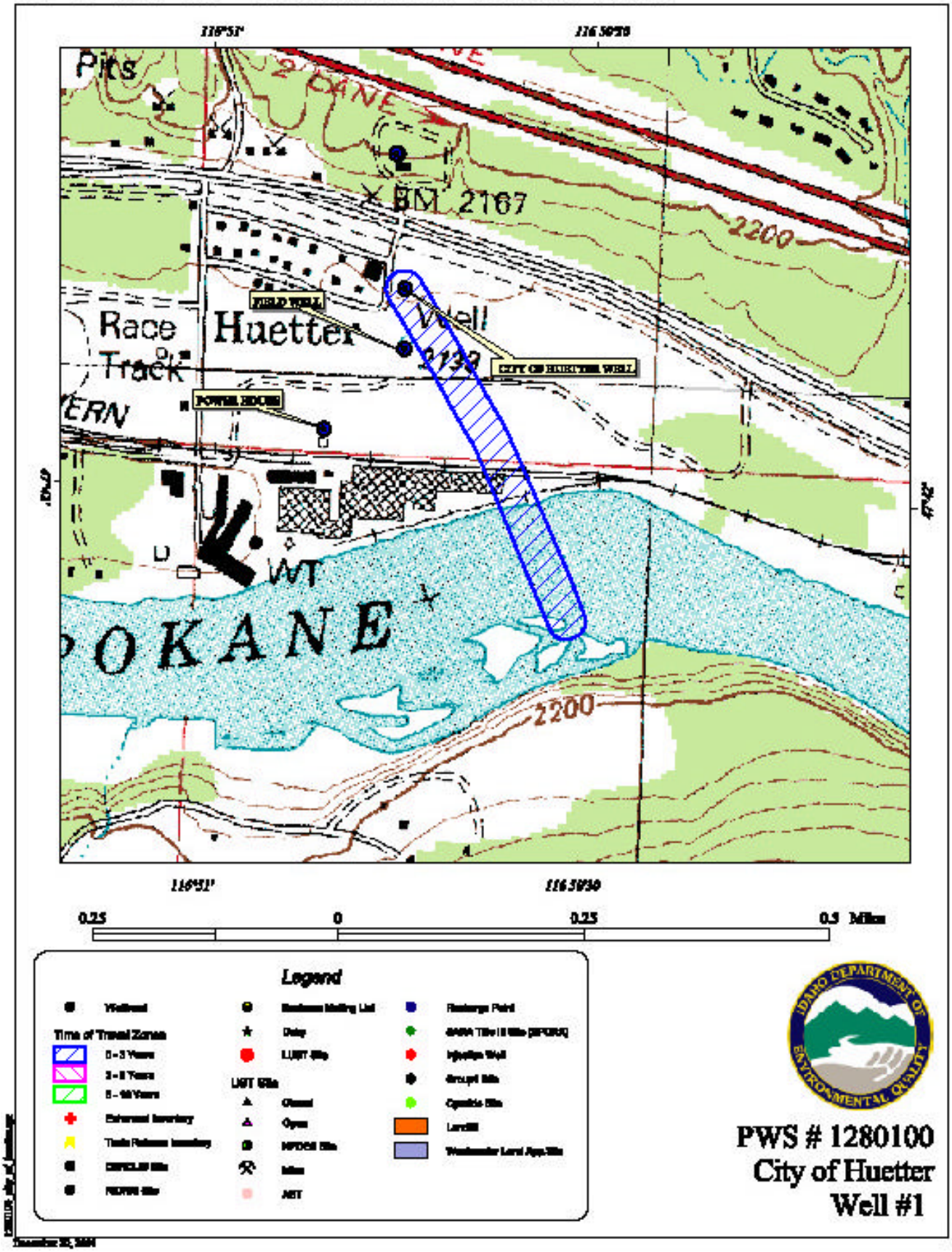
### Well Construction

Well construction directly affects the ability of the wells to protect the aquifer from contaminants. Lower scores imply a well that can better protect the water. This portion of the susceptibility analysis relies on information from individual well logs and from the most recent sanitary survey of the public water system. The well log for the City of Huetter well is not on file with DEQ. The last sanitary survey of the system was conducted in April 1997.

The City of Huetter drinking water system relies on a single well extracting ground water for domestic uses. No treatment is required before the water enters the distribution system. The 1997 sanitary survey found the system to be in compliance with *Idaho Rules for Public Drinking Water Systems*. No deficiencies in well seal or wellhead maintenance were observed during the inspection.

The well is 180 feet deep and has an 8-inch steel casing that extends to 170 feet below the surface. The Bottom 10 feet of the well is screened. The static water level in the well is at 132 feet. No information is available about the depth of the well seal or about the composition of the soils above the water table.

*Figure 2. City of Huetter Delineation and Potential Contaminant Inventory.*



**Hydrologic Sensitivity**

The hydrologic sensitivity score for the City of Huetter wells was 6 points out 6 points possible. The score reflects natural geologic conditions at the well site and in the recharge zone. Information for this portion of the analysis is derived from the well log and the soil drainage classification inside the delineated well recharge zone boundaries. The soils in the recharge zone as a whole are moderately well to well drained. Poorly drained to moderately well drained soils are more protective of ground water than soils that drain faster.

The depth to ground water is less than 300 feet. Composition of the soil above the water table at the well site is unknown since the well log is not available. Never the less, the hydrologic sensitivity score counted against the City of Huetter well is in line with scores for other wells on the Rathdrum Prairie Aquifer whose well logs show porous material above the ground water level.

**Potential Contaminant Sources and Land Use**

Historic land use in The City of Huetter well recharge zone was industrial. The delineation lies under the former Crown Pacific log yard. A rail line near the river crosses the delineation boundaries.
The mill is out of business and the yard is not used for log storage at this time. Potential contaminants that may have been associated with log hauling and storage and the manufacturing of lumber products include inorganic chemicals (IOCs), synthetic organic chemicals (SOCs), and volatile organic chemicals (VOCs). Future use of the site has not been determined.

**Historic Water Quality**

City of Huetter has had few water quality problems. The system tests monthly for total coliform bacteria. DEQ records going back to October 1992 show not positive results. Volatile organic chemicals and synthetic organic chemicals have never been detected in the water. Radiological contaminants at concentrations below the Maximum Contaminant Level (MCL) were detected in 1997, 1980, 1993 and 1997.

City of Huetter is required to test annually for nitrates. Concentrations detected range between 0.034 and 1.06 mg/l. The MCL for nitrate is 10 mg/l. Test results for other inorganic chemical constituents are as follows:

- Barium (MCL = 2.0 mg/l) 0.02 mg/l. October 2001
- Iron 4.1 mg/l. June 1988.
- Sodium 2.1 to 2.9 mg/l. November 1988-October 2001.

## Ranking

The City of Huetter well ranked moderately susceptible to all classes of regulated contaminants. Natural risk factors associated with the geology of the Rathdrum Prairie Aquifer added the most points to the final susceptibility scores. Total scores in each category are summarized on Table 1. The complete analysis worksheet for the well is in Attachment A.

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.2)
2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

The final ranking categories are as follows:

- 0 - 5 Low Susceptibility
- 6 - 12 Moderate Susceptibility
- > 13 High Susceptibility

**Table 1. Summary of City of Huetter Susceptibility Evaluation**

| **Cumulative Susceptibility Scores** | | | | | | |
|---|---|---|---|---|---|---|
| **Well Name** | System Construction | Hydrologic Sensitivity | Contaminant Inventory | | | |
| | | | IOC | VOC | SOC | Microbial |
| Well #1 | 4 | 6 | 4 | 4 | 4 | 2 |
| **Final Susceptibility Score/Ranking** | | | | | | |
| | IOC | | VOC | | SOC | Microbial |
| Well #1 | 11/Moderate | | 11/Moderate | | 11/Moderate | 11/Moderate |

IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical
*High - Indicates source automatically scored as high susceptibility due to presence of a VOC or SOC; or the presence of an IOC above the maximum contaminant level in the tested drinking water, or the repeated presence of bacteria in wellhead samples.

## Section 4. Options for Drinking Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

An effective drinking water protection program is tailored to the particular local area. The state and local health districts have instituted enhanced protection of the ground water in the Rathdrum Prairie Aquifer because of its high use and uniquely pristine water quality. The protections are generally aquifer wide and are not aimed at zones of contribution to a specific well or water system. *The Spokane Valley-Rathdrum Prairie Atlas*, sent to water systems on the prairie when they were invited to perform an enhanced contaminant inventory, describes some of the regional protection measures.

The 186 public water systems in Idaho that draw water from the Rathdrum Prairie Aquifer should consider forming a regional group to represent their interests before state, county and municipal governing bodies when regulatory tools like zoning overlays, or enactment of building codes are the most appropriate ground water protection measures. These types of measures could be used to protect the capture zones of a specific system or group of wells that could be put at risk from local land use changes. Partnerships with state and local agencies and industry groups should also be established. For instance, source water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, local Soil Conservation District, and the Natural Resources Conservation Service.

The City of Huetter water system is in compliance with *Idaho Rules for Public Drinking Water Systems.* Drinking water protection activities for City of Huetter should emphasize adhering to a regular water testing schedule and a routine maintenance schedule. It may be helpful for the system to develop a maintenance and operation guide for future operators that explains the necessity for keeping the pump house and sanitary set back around the well free from the use or storage of potential ground water contaminants. Because the well recharge zone is so small, it may be feasible for the City of Huetter to acquire jurisdiction over the entire area and regulate future development in order to protect the ground water. Water users can be invited to participate in voluntary ground water protection activities like household hazardous materials collection days.

Due to the time involved with the movement of ground water, wellhead protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

## Assistance

Public water suppliers and users may call the following IDEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the IDEQ office for preliminary review and comments.

Coeur d'Alene Regional DEQ Office (208) 769-1422

State IDEQ Office (208) 373-0502

Website: http://www.deq.state.id.us/

Water suppliers serving fewer than 10,000 persons may contact Melinda Harper, Idaho Rural Water Association, at (208) 343-7001 for assistance with drinking water (formerly wellhead protection) strategies.

## References Cited


Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, 1997. "Recommended Standards for Water Works."

Idaho Department of Agriculture, 1998. Unpublished Data.

Idaho Division of Environmental Quality, 1994. Ground Water and Soils Reconnaissance of the Lower Payette Area, Payette County, Idaho. Ground Water Quality Technical Report No. 5. Idaho Division of Environmental Quality. December 1994.

Idaho Division of Environmental Quality, 1996. Lower Payette River Agriculture Irrigation Water Return Study and Ground Water Evaluation, Payette County, Idaho. Water Quality Status Report No. 115.

Idaho Department of Environmental Quality, 1997. Design Standards for Public Drinking Water Systems. IDAPA 58.01.08.550.01.

Idaho Department of Environmental Quality, 2000. City of Fruitland Wellhead Viability Project 319 Grant Final Report July 2000.

Idaho Department of Water Resources, 1993. Administrative Rules of the Idaho Water Resource Board: Well Construction Standards Rules. IDAPA 37.03.09.

Natural Resource Conservation Service, 1991. Idaho Snake-Payette Rivers Hydrologic Unit Plan of Work. March 1991.

United States Geological Survey, 1986. Quality of Ground Water in the Payette River Basin, Idaho. United States Geological Survey. Water Resources Investigation Report 86-4013.

University of Idaho. 1986. Ground Water Resources in a Portion of Payette County, Idaho. Idaho Water Resources Research Institute. University of Idaho. Moscow, Idaho. April 1986.

# Attachment A

# City of Huetter
# Susceptibility Analysis
# Worksheet

**Ground Water Susceptibility**

Public Water System Name : **HUETTER CITY OF** Source: **WELL 1**

Public Water System Number : **1280100** 12/19/01 11:42:56 AM

| **1. System Construction** | | SCORE |
|---|---|---|
| Drill Date | UNKNOWN | |
| Driller Log Available | NO | |
| Sanitary Survey (if yes, indicate date of last survey) | YES 1998 | |
| Well meets IDWR construction standards | UNKNOWN | 1 |
| Wellhead and surface seal maintained | YES | 0 |
| Casing and annular seal extend to low permeability unit | UNKNOWN | 2 |
| Highest production 100 feet below static water level | NO | 1 |
| Well located outside the 100 year flood plain | YES | 0 |
| ***Total System Construction Score*** | | **4** |

| **2. Hydrologic Sensitivity** | | |
|---|---|---|
| Soils are poorly to moderately drained | NO | 2 |
| Vadose zone composed of gravel, fractured rock or unknown | UNKNOWN | 1 |
| Depth to first water > 300 feet | NO | 1 |
| Aquitard present with > 50 feet cumulative thickness | UNKNOWN | 2 |
| ***Total Hydrologic Score*** | | **6** |

| | | | IOC | VOC | SOC | Microbial |
|---|---|---|---|---|---|---|
| **3. Potential Contaminant / Land Use - ZONE 1A (Sanitary Setback)** | | | Score | Score | Score | Score |
| Land Use Zone 1A | URBAN/INDUSTRIAL | | 2 | 2 | 2 | 2 |
| Farm chemical use high | NO | | 0 | 0 | 0 | |
| IOC, VOC, SOC, or Microbial sources in Zone 1A | NO | | NO | NO | NO | NO |
| ***Total Potential Contaminant Source/Land Use Score - Zone 1A*** | | | **2** | **2** | **2** | **2** |
| **Potential Contaminant / Land Use - ZONE 1B ( 3 YR. TOT)** | | | | | | |
| Contaminant sources present (Number of Sources) | YES | Former log yard with rail spur | 1 | 1 | 1 | 0 |
| (Score = # Sources X 2 ) 8 Points Maximum | | | 2 | 2 | 2 | 0 |
| Sources of Class II or III leacheable contaminants or Microbials | NO | Inactive site | 0 | 0 | 0 | |
| 4 Points Maximum | | | 0 | 0 | 0 | |
| Zone 1B contains or intercepts a Group 1 Area | NO | | 0 | 0 | 0 | 0 |
| Land use Zone 1B | Less Than 25% Agricultural Land | | 0 | 0 | 0 | 0 |
| ***Total Potential Contaminant Source / Land Use Score - Zone 1B*** | | | **3** | **3** | **3** | **0** |
| **Cumulative Potential Contaminant / Land Use Score** | | | **4** | **4** | **4** | **2** |
| **4. Final Susceptibility Source Score** | | | **11** | **11** | **11** | **11** |
| **5. Final Well Ranking** | | | Moderate | Moderate | Moderate | Moderate |

# POTENTIAL CONTAMINANT INVENTORY
# LIST OF ACRONYMS AND DEFINITIONS

**AST (Aboveground Storage Tanks) –** Sites with aboveground storage tanks.

**Business Mailing List –** This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

**CERCLIS –** This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

**Cyanide Site –** DEQ permitted and known historical sites/facilities using cyanide.

**Dairy –** Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

**Deep Injection Well –** Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

**Enhanced Inventory** – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

**Floodplain –** This is a coverage of the 100year floodplains.

**Group 1 Sites –** These are sites that show elevated levels of contaminants and are not within the priority one areas.

**Inorganic Priority Area –** Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

**Landfill –** Areas of open and closed municipal and non-municipal landfills.

**LUST (Leaking Underground Storage Tank)** – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

**Mines and Quarries** – Mines and quarries permitted through the Idaho Department of Lands.)

**Nitrate Priority Area –** Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

**NPDES (National Pollutant Discharge Elimination System) –** Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

**Organic Priority Areas –** These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

**Recharge Point –** This includes active, proposed, and possible recharge sites on the Snake River Plain.

**RICRIS –** Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

**SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) –** These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

**Toxic Release Inventory (TRI)** – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

**UST (Underground Storage Tank) –** Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

**Wastewater Land Applications Sites** – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

**Wellheads –** These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

**NOTE:** Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.